

**SECTION 01 00 00  
GENERAL REQUIREMENTS**

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**SECTION 01 00 00**  
**GENERAL REQUIREMENTS**

**1.1 GENERAL INTENTION**

**A. GENERAL INTENTION**

The contractor shall provide design-build A/E and Construction Services to build a single story structure for a Domiciliary Rehabilitation Treatment Program Center at the Tennessee Valley Healthcare System, Murfreesboro, Tennessee campus to include furnishing Architectural/Engineering Design and providing all material, labor, tools, equipment and supervision for a completed construction project.

B. Visits to the site by Bidders may be made only by appointment with the Contracting Officer's Representative through the Contracting Officer.

D. Before placement and installation of work subject to tests by testing laboratory retained by the contractor, the Contractor shall notify the COR/Project Manager in sufficient time to enable testing laboratory personnel to be present at the site in time for proper taking and testing of specimens and field inspection. Such prior notice shall be not less than three work days unless otherwise designated by the COR/Project Manager.

E. All employees of general contractor and subcontractors shall comply with VA security management program and obtain permission of the VA police, be identified by project and employer, and restricted from unauthorized access.

F. Prior to commencing work, general contractor shall provide proof that an OSHA designated "competent person" (CP) (29 CFR 1926.20(b) (2) will maintain a presence at the work site whenever the general or subcontractors are present.

G. Training:

1. All employees of general contractor or subcontractors shall have the 10-hour or 30-hour OSHA Construction Safety course and other relevant competency training, as determined by RE/COR acting as the Construction Safety Officer with input from the facility Construction Safety Committee.

2. Submit training records of all such employees for approval before the start of work.

H. VHA Directive 2011-36, Safety and Health during Construction, dated 9/22/2011 in its entirety is made a part of this section.

**1.2 STATEMENT OF BID ITEM(S)**

Contractor shall provide professional design and construction services (design-build) to construct a new building for a Domiciliary Rehabilitation Center adjacent to Building **11** at the VA Tennessee Valley Healthcare System, Murfreesboro Campus, Murfreesboro, TN 37129. The Domiciliary Rehabilitation building shall house 16 private bedrooms and bathrooms, and associated support

space as outlined in the SEPS Space Plan. Furnish labor, materials, supplies, supervision, and equipment necessary to complete the design and construction. General work includes, but is not limited to, professional services of surveyor, architect, interior designer, fire and safety professional consultant, industrial hygienist, structural engineer, civil engineer, landscape architect, mechanical engineer, and plumbing engineer. Work also includes general construction, alterations, roads, walks, grading, drainage, mechanical and electrical work, fire alarm and sprinkler system, security system, utility systems, landscaping, necessary removal of existing structures and construction and certain other items.

A. Bid Item I shall be based on the attached SEPS program titled Base Bid which totals 10,000 square feet.

B. Bid Item II shall be based on the attached SEPS program titled Bid Alternate 1.

### **1.3 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR**

- A. AFTER AWARD OF CONTRACT, 4 sets of specifications and drawings (full size and half size) will be furnished.
- B. Additional sets of drawings may be made by the Contractor, at Contractor's expense, from electronic documents furnished by licensed architects and engineers. Such prints shall be returned to the Issuing Office immediately after printing is completed.

### **1.4 CONSTRUCTION SECURITY REQUIREMENTS**

#### **A. Security Plan:**

- 1. The security plan defines both physical and administrative security procedures that will remain effective for the entire duration of the project.
- 2. The General Contractor is responsible for assuring that all sub-contractors working on the project and their employees also comply with these regulations.

#### **B. Security Procedures:**

- 1. General Contractor's employees shall not enter the project site without appropriate badge. They may also be subject to inspection of their personal effects when entering or leaving the project site.
- 2. For working outside the "regular hours" as defined in the contract, The General Contractor shall give 3 days notice to the Contracting Officer so that security arrangements can be provided for the employees. This notice is separate from any notices required for utility shutdown described later in this section.
- 3. No photography of VA premises is allowed without written permission of the Contracting Officer.
- 4. VA reserves the right to close down or shut down the project site and order General Contractor's employees off the premises in the event of

a national emergency. The General Contractor may return to the site only with the written approval of the Contracting Officer.

**C. Key Control:**

1. The General Contractor shall provide duplicate keys and lock combinations to the COR for the purpose of security inspections of every area of project including tool boxes and parked machines and take any emergency action.
2. The General Contractor shall turn over all permanent lock cylinders to the VA locksmith for permanent installation.

**D. Document Control:**

1. Before starting any work, the General Contractor/Sub Contractors shall submit an electronic security memorandum describing the approach to following goals and maintaining confidentiality of "sensitive information".
2. The contractor will provide an approved Cost Loaded CPM Schedule. The Cost Loaded CPM Schedule will be revised on a monthly basis and approved by Engineering on a monthly basis until the successful completion of the subject project.
3. The General Contractor is responsible for safekeeping of all drawings, project manual and other project information. This information shall be shared only with those with a specific need to accomplish the project.
4. Certain documents, sketches, videos or photographs and drawings may be marked "Law Enforcement Sensitive" or "Sensitive Unclassified". Secure such information in separate containers and limit the access to only those who will need it for the project. Return the information to the Contracting Officer upon request.
5. These security documents shall not be removed or transmitted from the project site without the written approval of Contracting Officer.
6. All paper waste or electronic media such as CD's and diskettes shall be shredded and destroyed in a manner acceptable to the VA.
7. Notify Contracting Officer and Site Security Officer immediately when there is a loss or compromise of "sensitive information".
8. All electronic information shall be stored in specified location following VA standards and procedures using an Engineering Document Management Software (EDMS).
  - a. Security, access and maintenance of all project drawings, both scanned and electronic shall be performed and tracked through the EDMS system.
  - b. "Sensitive information" including drawings and other documents may be attached to e-mail provided all VA encryption procedures are followed.

**E. Motor Vehicle Restrictions**

1. Vehicle authorization request shall be required for any vehicle entering the site and such request shall be submitted 24 hours before the date and time of access. Access shall be restricted to picking up and dropping off materials and supplies.
2. Separate permits shall be issued for General Contractor and its employees for parking in designated areas only.

**1.5 FIRE SAFETY**

A. Applicable Publications: Publications listed below form part of this Article to extent referenced. Publications are referenced in text by basic designations only.

1. American Society for Testing and Materials (ASTM):

E84-2009.....Surface Burning Characteristics of Building Materials

2. National Fire Protection Association (NFPA):

10-2010.....Standard for Portable Fire Extinguishers

30-2008.....Flammable and Combustible Liquids Code

51B-2009.....Standard for Fire Prevention During Welding, Cutting and Other Hot Work

70-2011.....National Electrical Code

101-2012.....Life Safety Code

241-2009.....Standard for Safeguarding Construction, Alteration, and Demolition Operations

3. Occupational Safety and Health Administration (OSHA):

29 CFR 1926.....Safety and Health Regulations for Construction

4. VHA Directive 2005-007

B. Fire Safety Plan: Establish and maintain a fire protection program in accordance with 29 CFR 1926. Prior to start of work, prepare a plan detailing project-specific fire safety measures, including periodic status reports, and submit to COR/Project Manager and Facility Safety Officer for review for compliance with contract requirements in accordance with VHA Directive 2005-007, NFPA 101 and NFPA 241. Prior to beginning work, all employees of the contractor and/or any subcontractors shall undergo a safety briefing provided by the general contractor's competent person per OSHA requirements. This briefing shall include information on the construction limits, VAMC safety guidelines, means of egress, break areas, work hours, locations of restrooms, use of

- VAMC equipment, etc. Documentation shall be provided to the COR/Project Manager that individuals have undergone contractor's safety briefing.
- C. Site and Building Access: Maintain free and unobstructed access to facility emergency services and for fire, police and other emergency response forces in accordance with NFPA 241.
  - D. Separate temporary facilities, such as trailers, storage sheds, and dumpsters, from existing buildings and new construction by distances in accordance with NFPA 241. For small facilities with less than 6 m (20 feet) exposing overall length, separate by 3m (10 feet).
  - E. Temporary Construction Partitions:
    - 1. Install and maintain temporary construction partitions to provide smoke-tight separations between construction areas and adjoining areas. Construct partitions of gypsum board or treated plywood (flame spread rating of 25 or less in accordance with ASTM E84) on both sides of fire retardant treated wood or metal steel studs. Extend the partitions through suspended ceilings to floor slab deck or roof. Seal joints and penetrations. At door openings, install Class C,  $\frac{3}{4}$  hour fire/smoke rated doors with self-closing devices.
    - 2. Install fire-rated temporary construction partitions as shown on drawings to maintain integrity of existing exit stair enclosures, exit passageways, fire-rated enclosures of hazardous areas, horizontal exits, smoke barriers, vertical shafts and openings enclosures.
    - 3. Close openings in smoke barriers and fire-rated construction to maintain fire ratings. Seal penetrations with listed through-penetration firestop materials in accordance with Section 07 84 00, FIRESTOPPING.
  - F. Temporary Heating and Electrical: Install, use and maintain installations in accordance with 29 CFR 1926, NFPA 241 and NFPA 70.
  - G. Means of Egress: Do not block exiting for occupied buildings, including paths from exits to roads. Minimize disruptions and coordinate with COR/Project Manager and facility Safety Officer.
  - H. Egress Routes for Construction Workers: Maintain free and unobstructed egress. Inspect daily. Report findings and corrective actions weekly to COR/Project Manager and facility Safety Officer.
  - I. Fire Extinguishers: Provide and maintain extinguishers in construction areas and temporary storage areas in accordance with 29 CFR 1926, NFPA 241 and NFPA 10.
  - J. Flammable and Combustible Liquids: Store, dispense and use liquids in accordance with 29 CFR 1926, NFPA 241 and NFPA 30.
  - L. Sprinklers: Install, test and activate new automatic sprinklers prior to removing existing sprinklers.
  - M. Existing Fire Protection: Do not impair automatic sprinklers, smoke and heat detection, and fire alarm systems, except for portions immediately

under construction, and temporarily for connections. Provide fire watch for impairments more than 4 hours in a 24-hour period. Request interruptions in accordance with Article, OPERATIONS AND STORAGE AREAS, and coordinate with COR/Project Manager and facility Safety Officer. All existing or temporary fire protection systems (fire alarms, sprinklers) located in construction areas shall be tested as coordinated with the medical center. Parameters for the testing and results of any tests performed shall be recorded by the medical center and copies provided to the COR/Project Manager.

- N. Smoke Detectors: Prevent accidental operation. Remove temporary covers at end of work operations each day. Coordinate with COR/Project Manager and facility Safety Officer.
- O. Hot Work: Perform and safeguard hot work operations in accordance with NFPA 241 and NFPA 51B. Coordinate with COR/Project Manager. Obtain permits from facility Safety Officer at least 48 hours in advance. Designate contractor's responsible project-site fire prevention program manager to permit hot work.
- P. Fire Hazard Prevention and Safety Inspections: Inspect entire construction areas weekly. Coordinate with, and report findings and corrective actions weekly to COR/Project Manager and facility Safety Officer.
- Q. Smoking: Smoking is prohibited in and adjacent to construction areas inside existing buildings and additions under construction. In separate and detached buildings under construction, smoking is prohibited except in designated smoking rest areas.
- R. Dispose of waste and debris in accordance with NFPA 241. Remove from buildings daily.
- S. Perform other construction, alteration and demolition operations in accordance with 29 CFR 1926.

#### **1.6 OPERATIONS AND STORAGE AREAS**

- A. The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. Temporary buildings (e.g., job trailer, storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

- C. The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.
- D. Working space and space available for storing materials shall be as determined by the COR.
- E. Workmen are subject to rules of Medical Center applicable to their conduct.
- F. Execute work so as to interfere as little as possible with normal functioning of Medical Center as a whole, including operations of utility services, fire protection systems and any existing equipment, and with work being done by others. Use of equipment and tools that transmit vibrations and noises through the building structure, are not permitted in buildings that are occupied, during construction, jointly by patients or medical personnel, and Contractor's personnel, except as permitted by COR where required by limited working space.
  - 1. Do not store materials and equipment in other than assigned areas.
  - 2. Schedule delivery of materials and equipment to immediate construction working areas within buildings in use by Department of Veterans Affairs in quantities sufficient for not more than two work days. Provide unobstructed access to Medical Center areas required to remain in operation.
  - 3. Where access by Medical Center personnel to vacated portions of buildings is not required, storage of Contractor's materials and equipment will be permitted subject to fire and safety requirements.
- G. Utilities Services: Where necessary to cut existing pipes, electrical wires, conduits, cables, etc., of utility services, or of fire protection systems or communications systems (except telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by COR. All such actions shall be coordinated with the VA.
- H. Phasing: To insure such executions, Contractor shall furnish the COR with a schedule of approximate dates on which the Contractor intends to accomplish work in each specific area of site, building or portion thereof. In addition, Contractor shall notify the COR two weeks in advance of the proposed date of starting work in each specific area of site, building or portion thereof. Arrange such dates to insure

accomplishment of this work in successive phases mutually agreeable to Medical Center Director, COR and Contractor:

I. Building 11 will be occupied during performance of work.

Contractor shall take all measures and provide all material necessary for protecting existing equipment and property in affected areas of construction against dust and debris, so that equipment and affected areas to be used in the Medical Centers operations will not be hindered. Contractor shall permit access to Department of Veterans Affairs personnel and patients through other construction areas which serve as routes of access to such affected areas and equipment. Coordinate alteration work in areas occupied by Department of Veterans Affairs so that Medical Center operations will continue during the construction period.

I. Construction Fence: Before construction operations begin, Contractor shall provide a chain link construction fence, 2.1m (seven feet) minimum height, around the construction area indicated on the drawings. Provide gates as required for access with necessary hardware, including hasps and padlocks. Fasten fence fabric to terminal posts with tension bands and to line posts and top and bottom rails with tie wires spaced at maximum 375mm (15 inches). Bottom of fences shall extend to 25mm (one inch) above grade. Remove the fence when directed by COR.

J. When an area is turned over to Contractor, Contractor shall accept entire responsibility therefore.

1. Contractor shall maintain a minimum temperature of 4 degrees C (40 degrees F) at all times, except as otherwise specified.

2. Contractor shall maintain in operating condition existing fire protection and alarm equipment. In connection with fire alarm equipment, Contractor shall make arrangements for pre-inspection of site with Fire Department or Company (Department of Veterans Affairs or municipal) whichever will be required to respond to an alarm from Contractor's employee or watchman.

K. Utilities Services: Maintain existing utility services for Medical Center at all times. Provide temporary facilities, labor, materials, equipment, connections, and utilities to assure uninterrupted services. Where necessary to cut existing water, steam, gases, sewer or air pipes, or conduits, wires, cables, etc. of utility services or of fire protection systems and communications systems (including telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by COR.

1. No utility service such as water, gas, steam, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of COR. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished, work on any

- energized circuits or equipment shall not commence without the Medical Center Director's prior knowledge and written approval. Refer to specification Sections 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS for additional requirements.
2. Contractor shall submit a request to interrupt any such services to, in writing, 4 days in advance of proposed interruption. Request shall state reason, date, exact time of, and approximate duration of such interruption.
  3. Contractor will be advised (in writing) of approval of request, or of which other date and/or time such interruption will cause least inconvenience to operations of Medical Center. Interruption time approved by Medical Center may occur at other than Contractor's normal working hours.
  4. Major interruptions of any system must be requested, in writing, at least 15 calendar days prior to the desired time and shall be performed as directed by the COR.
  5. In case of a contract construction emergency, service will be interrupted on approval of COR. Such approval will be confirmed in writing as soon as practical.
  6. Whenever it is required that a connection fee be paid to a public utility provider for new permanent service to the construction project, for such items as water, sewer, electricity, gas or steam, payment of such fee shall be the responsibility of the Government and not the Contractor.
- L. Abandoned Lines: All service lines such as wires, cables, conduits, ducts, pipes and the like, and their hangers or supports, which are to be abandoned and are specifically noted on the drawings as not required to be entirely removed, shall be sealed, capped or plugged. The lines shall not be capped in finished areas, but shall be removed and sealed, capped or plugged in ceilings, within furred spaces, in unfinished areas, or within walls or partitions; so that they are completely behind the finished surfaces. All other abandoned lines shall be removed in their entirety, including their hangers and supports.
- M. To minimize interference of construction activities with flow of Medical Center traffic, comply with the following:
1. Keep roads, walks and entrances to grounds, to parking and to occupied areas of buildings clear of construction materials, debris and standing construction equipment and vehicles. Wherever excavation for new utility lines cross existing roads, at least one lane must be open to traffic at all times.
  2. Method and scheduling of required cutting, altering and removal of existing roads; walks and entrances must be approved by the COR/Project Manager.

N. Coordinate the work for this contract with other construction operations as directed by the COR. This includes the scheduling of traffic and the use of roadways, as specified in Article, USE OF ROADWAYS.

#### **1.7 ALTERATIONS**

A. Survey: Before any work is started, the Contractor shall make a thorough survey with the COR/Project Manager and a representative of VA Contracting Service, of areas of buildings in which alterations occur and areas which are anticipated routes of access, and furnish a report with photographs, signed by all three, to the Contracting Officer. This report shall list by rooms and spaces:

1. Existing condition and types of resilient flooring, doors, windows, walls and other surfaces not required to be altered throughout affected areas of buildings.
2. Existence and conditions of items such as plumbing fixtures and accessories, electrical fixtures, equipment, venetian blinds, shades, etc., required by drawings to be either reused or relocated, or both.
3. Shall note any discrepancies between drawings and existing conditions at site.
4. Shall designate areas for working space, materials storage and routes of access to areas within buildings where alterations occur and which have been agreed upon by Contractor and COR.

B. Any items required by drawings to be either reused or relocated or both, found during this survey to be nonexistent, or in opinion of COR and/or Supply Representative, to be in such condition that their use is impossible or impractical, shall be furnished and/or replaced by Contractor with new items in accordance with specifications which will be furnished by Government. Provided the contract work is changed by reason of this subparagraph B, the contract will be modified accordingly, under provisions of clause entitled "DIFFERING SITE CONDITIONS" (FAR 52.236-2) and "CHANGES" (FAR 52.243-4 and VAAR 852.236-88) of Section 00 72 00, GENERAL CONDITIONS.

C. Re-Survey: Thirty days before expected partial or final inspection date, the Contractor and COR together shall make a thorough re-survey of the areas of buildings involved. They shall furnish a report on conditions then existing, of resilient flooring, doors, windows, walls and other surfaces as compared with conditions of same as noted in first condition survey report:

1. Re-survey report shall also list any damage caused by Contractor to such flooring and other surfaces, despite protection measures; and, will form basis for determining extent of repair work required of Contractor to restore damage caused by Contractor's workmen in executing work of this contract.

D. Protection: Provide the following protective measures:

1. Wherever existing roof surfaces are disturbed they shall be protected against water infiltration. In case of leaks, they shall be repaired immediately upon discovery.
2. Temporary protection against damage for portions of existing structures and grounds where work is to be done, materials handled and equipment moved and/or relocated.
3. Protection of interior of existing structures at all times, from damage, dust and weather inclemency. Wherever work is performed, floor surfaces that are to remain in place shall be adequately protected prior to starting work, and this protection shall be maintained intact until all work in the area is completed.

#### **1.8 INFECTION PREVENTION MEASURES**

- A. Implement the requirements of VAMC's Pre-Construction Risk Assessment (PCRA) team. PCRA Group may monitor dust in the vicinity of the construction work and require the Contractor to take corrective action immediately if the safe levels are exceeded. See attachments A and B at the end of this document.
- B. Establish and maintain a dust control program as part of the contractor's infection preventive measures in accordance with the guidelines provided by PCRA Group and as specified here. Prior to start of work, prepare a plan detailing project-specific dust protection measures, including periodic status reports, and submit to COR/Project Manager (COR) and Facility PCRA team for review for compliance with contract requirements in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.
  1. All personnel involved in the construction or renovation activity shall be educated and trained in infection prevention measures established by the medical center.
- C. Medical center Infection Control personnel shall monitor for airborne disease (e.g. aspergillosis) as appropriate during construction. A baseline of conditions may be established by the medical center prior to the start of work and periodically during the construction stage to determine impact of construction activities on indoor air quality. In addition:
  1. The COR and VAMC Infection Control personnel shall review pressure differential monitoring documentation to verify that pressure differentials in the construction zone and in the patient-care rooms are appropriate for their settings. The requirement for negative air pressure in the construction zone shall depend on the location and type of activity. Upon notification, the contractor shall implement corrective measures to restore proper pressure differentials as needed.

2. In case of any problem, the medical center, along with assistance from the contractor, shall conduct an environmental assessment to find and eliminate the source.
- D. In general, following preventive measures shall be adopted during construction to keep down dust and prevent mold.
1. Dampen debris to keep down dust and provide temporary construction partitions in existing structures where directed by COR/Project Manager. Blank off ducts and diffusers to prevent circulation of dust into occupied areas during construction.
  2. Do not perform dust producing tasks within occupied areas without the approval of the COR. For construction in any areas that will remain jointly occupied by the medical Center and Contractor's workers, the Contractor shall:
    - a. Provide dust proof fire-rated temporary drywall construction barriers to completely separate construction from the operational areas of the hospital in order to contain dirt debris and dust. Barriers shall be sealed and made presentable on hospital occupied side. Install a self-closing rated door in a metal frame, commensurate with the partition, to allow worker access. Maintain negative air at all times. A fire retardant polystyrene, 6-mil thick or greater plastic barrier meeting local fire codes may be used where dust control is the only hazard, and an agreement is reached with the COR/Project Manager and Medical Center.
    - b. HEPA filtration is required where the exhaust dust may reenter the breathing zone. Contractor shall verify that construction exhaust to exterior is not reintroduced to the medical center through intake vents, or building openings. Install HEPA (High Efficiency Particulate Accumulator) filter vacuum system rated at 95% capture of 0.3 microns including pollen, mold spores and dust particles. Insure continuous negative air pressures occurring within the work area. HEPA filters should have ASHRAE 85 or other prefilter to extend the useful life of the HEPA. Provide both primary and secondary filtrations units. Exhaust hoses shall be heavy duty, flexible steel reinforced and exhausted so that dust is not reintroduced to the medical center.
    - c. Adhesive Walk-off/Carpet Walk-off Mats, minimum 600mm x 900mm (24" x 36"), shall be used at all interior transitions from the construction area to occupied Building 11. These mats shall be changed as often as required to maintain clean work areas directly outside construction area at all times.
    - d. Vacuum and wet mop all transition areas from construction to the occupied medical center at the end of each workday. Vacuum shall utilize HEPA filtration. Maintain surrounding area frequently.

Remove debris as they are created. Transport these outside the construction area in containers with tightly fitting lids.

- e. The contractor shall not haul debris through patient-care areas without prior approval of the COR and the Medical Center. When, approved, debris shall be hauled in enclosed dust proof containers or wrapped in plastic and sealed with duct tape. No sharp objects should be allowed to cut through the plastic. Wipe down the exterior of the containers with a damp rag to remove dust. All equipment, tools, material, etc. transported through occupied areas shall be made free from dust and moisture by vacuuming and wipe down.
- f. Using a HEPA vacuum, clean inside the barrier and vacuum ceiling tile prior to replacement. Any ceiling access panels opened for investigation beyond sealed areas shall be sealed immediately when unattended.
- g. There shall be no standing water during construction. This includes water in equipment drip pans and open containers within the construction areas. All accidental spills must be cleaned up and dried within 12 hours. Remove and dispose of porous materials that remain damp for more than 72 hours.
- h. At completion, remove construction barriers and ceiling protection carefully, outside of normal work hours. Vacuum and clean all surfaces free of dust after the removal.

E. Final Cleanup:

- 1. Upon completion of project, or as work progresses, remove all construction debris from above ceiling, vertical shafts and utility chases that have been part of the construction.
- 2. Perform HEPA vacuum cleaning of all surfaces in the construction area. This includes walls, ceilings, cabinets, furniture (built-in or free standing), partitions, flooring, etc.
- 3. All new air ducts shall be cleaned prior to final inspection.

**1.9 DISPOSAL AND RETENTION**

A. Materials and equipment accruing from work removed and from demolition of buildings or structures, or parts thereof, shall be disposed of as follows:

- 1. Reserved items which are to remain property of the Government are identified by attached tags or noted on drawings or in specifications as items to be stored. Items that remain property of the Government shall be removed or dislodged from present locations in such a manner as to prevent damage which would be detrimental to re-installation and reuse. Store such items where directed by COR.
- 2. Items not reserved shall become property of the Contractor and be removed by Contractor from Medical Center.

3. Items of portable equipment and furnishings located in rooms and spaces in which work is to be done under this contract shall remain the property of the Government. When rooms and spaces are vacated by the Department of Veterans Affairs during the alteration period, such items which are NOT required by drawings and specifications to be either relocated or reused will be removed by the Government in advance of work to avoid interfering with Contractor's operation.

#### **1.10 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS**

- A. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which is not to be removed and which does not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- B. The Contractor shall protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.
- C. Refer to Articles, "Alterations", "Restoration", and "Operations and Storage Areas" for additional instructions concerning repair of damage to structures and site improvements.

#### **1.11 RESTORATION**

- A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, steam, gas, or electric work without approval of the COR. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the COR/Project Manager before it is disturbed. Materials and workmanship used in restoring work shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.
- B. Upon completion of contract, deliver work complete and undamaged. Existing work (walls, ceilings, partitions, floors, mechanical and

electrical work, lawns, paving, roads, walks) disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work.

- C. At Contractor's own expense, Contractor shall immediately restore to service and repair any damage caused by Contractor's workmen to existing piping and conduits, wires, cables, of utility services or of fire protection systems and communications systems (including telephone) which are indicated on drawings and which are not scheduled for discontinuance or abandonment.
- D. Expense of repairs to such utilities and systems not shown on drawings or locations of which are unknown will be covered by adjustment to contract time and price in accordance with clause entitled "CHANGES" (FAR 52.243-4 and VAAR 852.236-88) and "DIFFERING SITE CONDITIONS" (FAR 52.236-2) of GENERAL CONDITIONS.

#### **1.12 LAYOUT OF WORK**

- A. The Contractor shall lay out the work from Government established base lines and bench marks, indicated on the approved construction documents, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at Contractor's own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated on the survey drawings. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the survey drawings until authorized to remove them. If such marks are destroyed by the Contractor or through Contractor's negligence before their removal are authorized, the Contractor will replace them at no additional cost to the government.
- B. Establish and plainly mark center lines for the new building and addition to each existing building and such other lines and grades that are reasonably necessary to properly assure that location, orientation, and elevations established for each such structure and or addition, roads, parking lots, are in accordance with lines and elevations shown on contract drawings.
- C. Following completion of general mass excavation and before any other permanent work is performed, establish and plainly mark (through use of appropriate batter boards or other means) sufficient additional survey control points or system of points as may be necessary to assure proper alignment, orientation, and grade of all major features of work. Survey shall include, but not be limited to, location of lines and grades of footings, exterior walls, and center lines of columns in directions, major utilities and elevations of floor slabs:

1. Such additional survey control points or system of points thus established shall be checked and certified by a registered land surveyor or registered civil engineer. Furnish such certification to the COR before any work (such as footings, floor slabs, columns, walls, utilities and other major controlling features) is placed.
- D. During progress of work, and particularly as work progresses from floor to floor, Contractor shall have line grades and plumbness of all major form work checked and certified by a registered land surveyor or registered civil engineer as meeting requirements of contract drawings. Furnish such certification to the COR before any major items of concrete work are placed. In addition, Contractor shall also furnish to the COR certificates from a registered land surveyor or registered civil engineer that the following work is complete in every respect as required by contract drawings.
1. Lines of each building and or addition.
  2. Elevations of bottoms of footings and tops of floors of each building and or addition.
  3. Lines and elevations of sewers and of all outside distribution systems.
  4. Lines of elevations of all swales and interment areas.
  5. Lines and elevations of roads, streets and parking lots.
- E. Whenever changes from contract drawings are made in line or grading requiring certificates, record such changes on a reproducible drawing bearing the registered land surveyor or registered civil engineer seal, and forward these drawings upon completion of work to COR.
- F. The Contractor shall perform the surveying and layout work of this and other articles and specifications in accordance with the provisions of Article "Professional Surveying Services".

#### **1.13 PROFESSIONAL SURVEYING SERVICES**

- A. Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.
1. Registered professional land surveyor or registered civil engineer whose services are retained and paid for by the Contractor shall perform services specified herein and in other specification sections. The Contractor shall certify that the land surveyor or civil engineer is not one who is a regular employee of the Contractor, and that the land surveyor or civil engineer has no financial interest in this contract.
- B. Subsurface conditions will be developed by core borings and test pits by a Geotechnical Engineer. Logs of subsurface exploration will be provided

to the owner and used by the Structural Engineer and Civil Engineer for design of the building.

- C. A copy of the soil report will be made available to the Engineering Officer at the VA Medical Center. The survey, core borings and test logs shall be considered part of the contract documents.
- D. Government does not guarantee that other materials will not be encountered nor that proportions, conditions or character of several materials will not vary from those indicated by explorations. Bidders are expected to examine site of work and logs of borings; and, after investigation, decide for themselves character of materials and make their bids accordingly. Upon proper application to Department of Veterans Affairs, bidders will be permitted to make subsurface explorations of their own at site.

#### **1.14 AS-BUILT DRAWINGS**

- A. The contractor shall maintain two full size sets of as-built drawings which will be kept current during construction of the project, to include all contract changes, modifications and clarifications.
- B. All variations shall be shown in the same general detail as used in the contract drawings. To insure compliance, as-built drawings shall be made available for the COR/Project Manager's review, as often as requested.
- C. Contractor shall deliver two approved completed sets of as-built drawings to the COR within 15 calendar days after the acceptance of the project by the COR.
- D. Paragraphs A, B, & C shall also apply to all shop drawings.

#### **1.15 USE OF ROADWAYS**

- A. For hauling, use only established public roads and roads on Medical Center property and, when authorized by the COR, such temporary roads which are necessary in the performance of contract work. Temporary roads shall be constructed by the Contractor at Contractor's expense. When necessary to cross curbing, sidewalks, or similar construction, they must be protected by well-constructed bridges.
- B. When new permanent roads are to be a part of this contract, Contractor may construct them immediately for use to facilitate building operations. These roads may be used by all who have business thereon within zone of building operations.

#### **1.16 TEMPORARY USE OF MECHANICAL AND ELECTRICAL EQUIPMENT**

- A. Use of new installed mechanical and electrical equipment to provide heat, ventilation, plumbing, light and power will be permitted subject to compliance with the following provisions:
  - 1. Permission to use each unit or system must be given by COR/Project Manager. If the equipment is not installed and maintained in

accordance with the following provisions, the COR will withdraw permission for use of the equipment.

2. Electrical installations used by the equipment shall be completed in accordance with the drawings and specifications to prevent damage to the equipment and the electrical systems, i.e. transformers, relays, circuit breakers, fuses, conductors, motor controllers and their overload elements shall be properly sized, coordinated and adjusted. Voltage supplied to each item of equipment shall be verified to be correct and it shall be determined that motors are not overloaded. The electrical equipment shall be thoroughly cleaned before using it and again immediately before final inspection including vacuum cleaning and wiping clean interior and exterior surfaces.
  3. Units shall be properly lubricated, balanced, and aligned. Vibrations must be eliminated.
  4. Automatic temperature control systems for preheat coils shall function properly and all safety controls shall function to prevent coil freeze-up damage.
  5. The air filtering system utilized shall be that which is designed for the system when complete, and all filter elements shall be replaced at completion of construction and prior to testing and balancing of system.
  6. All components of heat production and distribution system, metering equipment, condensate returns, and other auxiliary facilities used in temporary service shall be cleaned prior to use; maintained to prevent corrosion internally and externally during use; and cleaned, maintained and inspected prior to acceptance by the Government.
- B. Prior to final inspection, the equipment or parts used which show wear and tear beyond normal, shall be replaced with identical replacements, at no additional cost to the Government.
- C. This paragraph shall not reduce the requirements of the mechanical and electrical specifications sections.

#### **1.18 TEMPORARY TOILETS**

- A. The Contractor is responsible for supplying temporary toilets for their employees inside the Contractor's job trailer.

#### **1.19 AVAILABILITY AND USE OF UTILITY SERVICES**

- A. The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. The Contractor shall carefully conserve any utilities furnished without charge.
- B. The Contractor, at Contractor's expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines. Before final acceptance of the work by the Government, the Contractor shall remove

all the temporary connections, distribution lines, and associated paraphernalia.

- C. Heat: Furnish temporary heat necessary to prevent injury to work and materials through dampness and cold. Use of open salamanders or any temporary heating devices which may be fire hazards or may smoke and damage finished work, will not be permitted. Maintain minimum temperatures as specified for various materials:
  - 1. Obtain heat by connecting to Medical Center heating distribution system.
- D. Electricity (for Construction and Testing): Furnish all temporary electric services.
  - 1. Obtain electricity by connecting to the Medical Center electrical distribution system. The Contractor shall meter and pay for electricity required for electric cranes and hoisting devices, electrical welding devices and any electrical heating devices providing temporary heat. Electricity for all other uses is available at no cost to the Contractor.
- E. Water (for Construction and Testing): Furnish temporary water service.
  - 1. Obtain water by connecting to the Medical Center water distribution system. Provide reduced pressure backflow preventer at each connection. Water is available at no cost to the Contractor.
  - 2. Maintain connections, pipe, fittings and fixtures and conserve water-use so none is wasted. Failure to stop leakage or other wastes will be cause for revocation (at COR's discretion) of use of water from Medical Center's system.
- G. Steam: Furnish steam system for testing required in various sections of specifications.
  - 1. Obtain steam for testing by connecting to the Medical Center steam distribution system. Steam is available at no cost to the Contractor.
  - 2. Maintain connections, pipe, fittings and fixtures and conserve steam-use so none is wasted. Failure to stop leakage or other waste will be cause for revocation (at COR's descretion), of use of steam from the Medical Center's system.

#### **1.20 NEW TELEPHONE EQUIPMENT**

The contractor shall coordinate with the work of installation of telephone equipment by others. This work shall be completed before the building is turned over to VA.

#### **1.21 TESTS**

- A. Pre-test mechanical and electrical equipment and systems and make corrections required for proper operation of such systems before requesting final tests. Final test will not be conducted unless pre-tested.

- B. Conduct final tests required in various sections of specifications in presence of an authorized representative of the Contracting Officer. Contractor shall furnish all labor, materials, equipment, instruments, and forms, to conduct and record such tests.
- C. Mechanical and electrical systems shall be balanced, controlled and coordinated. A system is defined as the entire complex which must be coordinated to work together during normal operation to produce results for which the system is designed. For example, air conditioning supply air is only one part of entire system which provides comfort conditions for a building. Other related components are return air, exhaust air, steam, chilled water, refrigerant, hot water, controls and electricity, etc. Another example of a complex which involves several components of different disciplines is a boiler installation. Efficient and acceptable boiler operation depends upon the coordination and proper operation of fuel, combustion air, controls, steam, feedwater, condensate and other related components.
- D. All related components as defined above shall be functioning when any system component is tested. Tests shall be completed within a reasonably short period of time during which operating and environmental conditions remain reasonably constant.
- E. Individual test result of any component, where required, will only be accepted when submitted with the test results of related components and of the entire system.

#### **1.21 INSTRUCTIONS**

- A. Contractor shall furnish Maintenance and Operating manuals and verbal instructions when required by the various sections of the specifications and as hereinafter specified.
- B. Manuals: Maintenance and operating manuals (four bound copies with indexes and electronic copy) for each separate piece of equipment shall be delivered to the COR coincidental with the delivery of the equipment to the job site. Manuals shall be complete, detailed guides for the maintenance and operation of equipment. They shall include complete information necessary for starting, adjusting, maintaining in continuous operation for long periods of time and dismantling and reassembling of the complete units and sub-assembly components. Manuals shall include an index covering all component parts clearly cross-referenced to diagrams and illustrations. Illustrations shall include "exploded" views showing and identifying each separate item. Emphasis shall be placed on the use of special tools and instruments. The function of each piece of equipment, component, accessory and control shall be clearly and thoroughly explained. All necessary precautions for the operation of the equipment and the reason for each precaution shall be clearly set forth. Manuals must reference the exact model, style and size of the piece of equipment and system being furnished. Manuals referencing equipment

similar to but of a different model, style, and size than that furnished will not be accepted.

- C. Instructions: Contractor shall provide qualified, factory-trained manufacturers' representatives to give detailed instructions to assigned Department of Veterans Affairs personnel in the operation and complete maintenance for each piece of equipment. All such training will be at the job site. These requirements are more specifically detailed in the various technical sections. Instructions for different items of equipment that are component parts of a complete system shall be given in an integrated, progressive manner. All instructors for every piece of component equipment in a system shall be available until instructions for all items included in the system have been completed. This is to assure proper instruction in the operation of inter-related systems. All instruction periods shall be at such times as scheduled by the COR and shall be considered concluded only when the COR is satisfied in regard to complete and thorough coverage. The Department of Veterans Affairs reserves the right to request the removal of, and substitution for, any instructor who, in the opinion of the COR, does not demonstrate sufficient qualifications in accordance with requirements for instructors above.

#### **1.22 GOVERNMENT-FURNISHED PROPERTY**

- A. The Government shall deliver to the Contractor, the Government-furnished property shown on the drawings.
- B. Equipment furnished by Government to be installed by Contractor shall be furnished to Contractor at the Medical Center.
- C. Storage space for equipment will be provided by the Government and the Contractor shall be prepared to unload and store such equipment therein upon its receipt at the Medical Center.
- D. Notify Contracting Officer in writing, 60 days in advance, of date on which Contractor shall be prepared to receive equipment furnished by Government. Arrangements will then be made by the Government for delivery of equipment.
  - 1. Immediately upon delivery of equipment, Contractor shall arrange for a joint inspection thereof with a representative of the Government. At such time the Contractor shall acknowledge receipt of equipment described, make notations, and immediately furnish the Government representative with a written statement as to its condition or shortages.
  - 2. Contractor thereafter is responsible for such equipment until such time as acceptance of contract work is made by the Government.
- E. Equipment furnished by the Government will be delivered in a partially assembled (knock down) condition in accordance with existing standard commercial practices, complete with all fittings, fastenings, and appliances necessary for connections to respective services installed

under contract. All fittings and appliances (i.e., couplings, ells, tees, nipples, piping, conduits, cables, and the like) necessary to make the connection between the Government furnished equipment item and the utility stub-up shall be furnished and installed by the contractor at no additional cost to the Government.

- F. Completely assemble and install the Government furnished equipment in place ready for proper operation in accordance with specifications and drawings.
- G. Furnish supervision of installation of equipment at construction site by qualified factory trained technicians regularly employed by the equipment manufacturer.

#### **1.23 RELOCATED EQUIPMENT ITEMS**

- A. Contractor shall disconnect, dismantle as necessary, remove and reinstall in new location, all existing equipment indicated by symbol "R" or otherwise shown to be relocated by the Contractor.
- B. Perform relocation of such equipment or items at such times and in such a manner as directed by the COR.
- C. Suitably cap existing service lines, such as steam, condensate return, water, drain, gas, air, vacuum and/or electrical, whenever such lines are disconnected from equipment to be relocated. Remove abandoned lines in finished areas and cap as specified herein before under paragraph "Abandoned Lines".
- D. Provide all mechanical and electrical service connections, fittings, fastenings and any other materials necessary for assembly and installation of relocated equipment; and leave such equipment in proper operating condition.
- E. All service lines such as noted above for relocated equipment shall be in place at point of relocation ready for use before any existing equipment is disconnected. Make relocated existing equipment ready for operation or use immediately after reinstallation.

#### **1.24 CONSTRUCTION SIGN**

- A. Provide a Construction Sign where directed by the COR/ Project Manager. All wood members shall be of framing lumber. Cover sign frame with 0.7 mm (24 gage) galvanized sheet steel nailed securely around edges and on all bearings. Provide three 100 by 100 mm (4 inch by 4 inch) posts (or equivalent round posts) set 1200 mm (four feet) into ground. Set bottom of sign level at 900 mm (three feet) above ground and secure to posts with through bolts. Make posts full height of sign. Brace posts with 50 x 100 mm (two by four inch) material as directed.
- B. Paint all surfaces of sign and posts two coats of white gloss paint. Border and letters shall be of black gloss paint, except project title which shall be blue gloss paint.

- C. Sign shall include Contractor's name, Architect, Engineers, Landscape Architect and professional color rendering of building.
- D. Maintain sign and remove it when directed by the COR/ Project Manager.
- E. Detail Drawing of construction sign shall be submitted to COR for approval.

**1.25 SAFETY SIGN**

- A. Provide a Safety Sign where directed by COR/ Project Manager. Face of sign shall be 19 mm (3/4 inch) thick exterior grade plywood. Provide two 100 mm by 100 mm (four by four inch) posts extending full height of sign and 900 mm (three feet) into ground. Set bottom of sign level at 1200 mm (four feet) above ground.
- B. Paint all surfaces of Safety Sign and posts with one prime coat and two coats of white gloss paint. Letters and design shall be painted with gloss paint of colors noted.
- C. Maintain sign and remove it when directed by COR/ Project Manager.
- D. Standard Detail Drawing Number SD10000-02 (Found on VA TIL) of safety sign showing required legend and other characteristics of sign is hereto and is made a part of this specification by reference to the VA TIL.
- E. Post the number of accident free days on a daily basis.

| Estimated Cost |              | No. of Photographs |
|----------------|--------------|--------------------|
| Up to          | \$250,000    | 50 to 100          |
| " "            | \$500,000    | 100 to 150         |
| " "            | \$1,000,000  | 150 to 200         |
| " "            | \$2,000,000  | 200 to 250         |
| " "            | \$5,000,000  | 250 to 300         |
| " "            | \$10,000,000 | 300 to 400         |
| More than      | \$10,000,000 | 400 to 500         |

**1.26 PHOTOGRAPHIC DOCUMENTATION**

- A. During the construction period through completion, provide photographic documentation of construction progress and at selected milestones including electronic indexing, navigation, storage and remote access to the documentation, as per these specifications.

B. Photographic documentation elements:

1. Each digital image shall be taken with a professional grade camera with minimum size of 6 megapixels (MP) capable of producing 200x250mm (8 x 10 inch) prints with a minimum of 2272 x 1704 pixels and 400x500mm (16 x 20 inch) prints with a minimum 2592 x 1944 pixels.
2. Indexing and navigation system shall utilize actual AUTOCAD construction drawings, making such drawings interactive on an on-line interface. For all documentation referenced herein, indexing and navigation must be organized by both time (date-stamped) and location throughout the project.
3. Documentation shall combine indexing and navigation system with inspection-grade digital photography designed to capture actual conditions throughout construction and at critical milestones. Documentation shall be accessible on-line through use of an internet connection. Documentation shall allow for secure multiple-user access, simultaneously, on-line.
4. Before construction, the building pad, adjacent streets, roadways, parkways, driveways, curbs, sidewalks, landscaping, adjacent utilities and adjacent structures surrounding the building pad and site shall be documented. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive architectural drawings. If site work or pad preparation is extensive, this documentation may be required immediately before construction and at several pre-determined intervals before building work commences.
5. Construction progress for all trades shall be tracked at pre-determined intervals, but not less than once every thirty (30) calendar days ("Progressions"). Progression documentation shall track both the exterior and interior construction of the building. Exterior Progressions shall track 360 degrees around the site and each building. Interior Progressions shall track interior improvements beginning when stud work commences and continuing until Project completion.
6. As-built condition of pre-slab utilities and site utilities shall be documented prior to pouring slabs, placing concrete and/or backfilling. This process shall include all underground and in-slab utilities within the building(s) envelope(s) and utility runs in the immediate vicinity of the building(s) envelope(s). This may also include utilities enclosed in slab-on-deck in multi-story buildings. Overlapping photographic techniques shall be used to insure maximum

coverage. Indexing and navigation accomplished through interactive site utility plans.

7. As-built conditions of mechanical, electrical, plumbing and all other systems shall be documented post-inspection and pre-insulation, sheet rock or dry wall installation. This process shall include all finished systems located in the walls and ceilings of all buildings at the Project. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive architectural drawings.
8. As-built conditions of exterior skin and elevations shall be documented with an increased concentration of digital photographs as directed by the COR/ Project Manager in order to capture pre-determined focal points, such as waterproofing, window flashing, radiused steel work, architectural or Exterior Insulation and Finish Systems (EIFS) detailing. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive elevations or elevation details.
9. As-built finished conditions of the interior of each building including floors, ceilings and walls shall be documented at certificate of occupancy or equivalent, or just prior to occupancy, or both, as directed by the COR/ Project Manager. Overlapping photographic techniques shall be used to insure maximum coverage. Indexing and navigation accomplished through interactive architectural drawings.
10. Miscellaneous events that occur during any Contractor site visit, or events captured by the Department of Veterans Affairs independently, shall be dated, labeled and inserted into a Section in the navigation structure entitled "Slideshows," allowing this information to be stored in the same "place" as the formal scope.
11. Customizable project-specific digital photographic documentation of other details or milestones. Indexing and navigation accomplished through interactive architectural plans.
12. Monthly (29 max) exterior progressions (360 degrees around the project) and slideshows (all elevations and building envelope). The slideshows allow for the inclusion of Department of Veterans Affairs pictures, aerial photographs, and timely images which do not fit into any regular monthly photopath.
13. Weekly (21 Max) Site Progressions - Photographic documentation capturing the project at different stages of construction. These progressions shall capture underground utilities, excavation,

grading, backfill, landscaping and road construction throughout the duration of the project.

14. Regular (8 max) interior progressions of all walls of the entire project to begin at time of substantial framed or as directed by the COR/ Project Manager through to completion.
  15. Detailed Exact-Built of all Slabs for all project slab pours just prior to placing concrete or as directed by the COR/ Project Manager.
  16. Detailed Interior exact built overlapping photos of the entire building to include documentation of all mechanical, electrical and plumbing systems in every wall and ceiling, to be conducted after rough-ins are complete, just prior to insulation and or drywall, or as directed by COR/ Project Manager.
  17. Finished detailed Interior exact built overlapping photos of all walls, ceilings, and floors to be scheduled by COR/ Project Manager prior to occupancy.
  18. In event a greater or lesser number of images than specified above are required by the COR/ Project Manager, adjustment in contract price will be made in accordance with clause entitled "CHANGES" (FAR 52.243-4 and VAAR 852.236-88).
- C. Images shall be taken by a commercial photographer and must show distinctly, at as large a scale as possible, all parts of work embraced in the picture.
- D. Coordination of photo shoots is accomplished through COR/ Project Manager. Contractor shall also attend construction team meetings as necessary. Contractor's operations team shall provide regular updates regarding the status of the documentation, including photo shoots concluded, the availability of new Progressions or Exact-Builts viewable on-line and anticipated future shoot dates.
- E. Contractor shall provide all on-line domain/web hosting, security measures, and redundant server back-up of the documentation.
- F. Contractor shall provide technical support related to using the system or service.
- G. Upon completion of the project, final copies of the documentation (the "Permanent Record") with the indexing and navigation system embedded (and active) shall be provided in an electronic media format, typically a DVD or external hard-drive. Permanent Record shall have Building Information Modeling (BIM) interface capabilities. On-line access terminates upon delivery of the Permanent Record.

### **1.27 FINAL ELEVATION DIGITAL IMAGES**

- A. A minimum of four (4) images of each elevation shall be taken with a minimum 6 MP camera, by a professional photographer with different settings to allow the COR/ Project Manager to select the image to be printed. All images are provided to the RE on a CD.
- B. Photographs shall be taken upon completion, including landscaping. They shall be taken on a clear sunny day to obtain sufficient detail to show depth and to provide clear, sharp pictures. Pictures shall be 400 mm x 500 mm (16 by 20 inches), printed on regular weight paper, matte finish archival grade photographic paper and produced by a RA4 process from the digital image with a minimum 300 PPI. Identifying data shall be carried on label affixed to back of photograph without damage to photograph and shall be similar to that provided for final construction photographs.
- C. Furnish two (2) 400 mm x 500 mm (16 by 20 inch or smaller size if approved by COR) color prints of the following buildings constructed under this project (elevations as selected by the RE from the images taken above). Photographs shall be artistically composed showing full front elevations. All images shall become property of the Government. Each of the selected six prints shall be place in a frame with a minimum of 2 inches of appropriate matting as a border. Provide a selection of a minimum of 3 different frames from which the SRE will select one style to frame all six prints. Photographs with frames shall be delivered to the COR/ Project Manager in boxes suitable for shipping.

### **1.28 HISTORIC PRESERVATION**

Where the Contractor or any of the Contractor's employees, prior to, or during the construction work, are advised of or discover any possible archeological, historical and/or cultural resources, the Contractor shall immediately notify the COR verbally, and then with a written follow up.

### **1.29 BRICK PANEL**

Contractor shall furnish 6x6 brick panel mock up, on the site, for approval of brick and mortar type, and color by COR.

## **SAFETY AND HEALTH DURING CONSTRUCTION**

**1. PURPOSE:** To establish a policy for maintaining a safe and healthy environment for patients, employees, visitors, and contractors during construction activities.

**2. POLICY:** In order to protect patients, staff, visitors, and contractors from safety and health hazards associated with construction activities on Department of Veterans Affairs Tennessee Valley Healthcare System (VA TVHS) property and leased property at which VA-funded construction is occurring, it is VA TVHS policy that procedures be followed for control of these hazards. Construction activities include projects performed by employees or contractors and enhanced-use lease projects within structures fully managed by VA TVHS.

### **3. RESPONSIBILITIES:**

a. **Director is responsible for:**

(1) Establishing and monitoring an effective facility construction safety program utilizing a multidisciplinary team with representatives from the following program areas: Infection Control, Patient Safety, VA Police Service, Engineering Service, Local Union Safety Representatives, and Logistics and Network Contracting Office.

(2) Ensuring appropriate staff receives training in construction safety.

(3) Designating a Competent Person(s) (CP) to oversee construction safety, who has the necessary training, experience, and authority to carry out his/her responsibilities with respect to safety and health during construction activities. Qualified VA staff must be appointed to serve as CP for construction work performed by temporary and permanent VA employees. The name and qualifications of the CP is documented in the minutes of the Environment of Care Board (EOCB).

***NOTE:** Occupational Safety and Health Administration (OSHA) Title 29 Code of Federal regulations (CFR) 1926.32(f) states “competent person means one who is capable of identifying existing and predictable hazards in the surroundings and working conditions which are unsanitary, hazardous or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them.”*

(4) Ensuring that a multidisciplinary team representing VA Police, Safety and/or Industrial Hygiene, Infection Control, Engineering, Local Union Safety Representatives, and Contracting oversee:

(a) Protection of patients, visitors, and employees from traumatic injury, as well as occupational and facility-associated infections.

(b) Compliance with OSHA and State construction safety regulations.

(c) Compliance with Environmental Protection Agency (EPA) and State of Tennessee environmental regulations.

(5) Ensuring that VA staff receives training as follows:

(a) Appointed CPs, resident and/or project engineers and facility safety program managers complete OSHA's 30 hour construction safety course.

(b) Engineering supervisors and foremen who oversee construction work complete OSHA's ten hour or 30 hour construction safety course before commencing any construction activities on VA owned or leased property.

(6) Ensuring that construction contracts awarded after December 31, 2004, specify that on-site general and sub-contractor's construction workers have completed the OSHA ten hour construction worker course, the 30 hour construction course, or other relevant competency training, as determined by the VA CP with input from the multidisciplinary team. The determination for training is based on the project hazards and complexity, State and Federal regulations and VA requirements. Identified projects require contractor submittals verifying completion of training.

b. **Multi-disciplinary Team:** is responsible for determining the scope and depth of safety, infection control, and security interventions appropriate for all in-house and contract construction work. The team may develop threshold criteria for each level of intervention. Some projects may require only the VA CP surveillance to ensure employee safety and OSHA compliance, while other projects will require all disciplines to be involved.

c. **Resident Engineer:** are responsible for working with contractor and VA TVHS staff to coordinate and monitor an effective construction safety program for projects under their direction.

d. **Contracting Officer:** (or representative) is responsible for supporting the Veterans Health Administration (VHA) CP, Safety Officer, Resident Engineer, and appropriate staff in implementing the construction safety program.

e. **Competent Person (CP):** the Engineering Supervisory Project Engineer is designated as the TVHS CP.

(1) CP responsibilities include project submittal reviews, monitoring, and periodic inspections of construction and renovation work sites conducted by contractors and VA staff.

(2) VA CPs for contract construction safety must be competent in the general inspection of typical work sites during construction and renovation performed by contract staff, and in the review of contractor safety program submittals.

***NOTE:*** VA CP(s) do not take the place of the contractor's competent person nor act on their behalf. The VA CP(s) determine if the contractor is meeting VA standards and contractual requirements for safety and OSHA compliance. When these standards and contract

*requirements are not being met, the VA Contracting Officer's Representative (COR) and CP must take immediate action to prevent injury, non-compliance, and/or property damage.*

f. **The Facility Safety Officer:** (Chief Engineer) is responsible for ensuring that VHA policy for the construction safety program is implemented within VHA facilities.

#### **4. PROCEDURES:**

a. **Multi-disciplinary Team will:**

(1) Ensure submittals for contract construction or renovation work includes the names, qualifications, and training dates for the contractor CP designated to administer the site-specific safety program, as well as the CP for other activities as required by OSHA regulation (such as scaffolds, cranes, excavations, etc.).

(2) **Conduct Pre Infection Control Risk Assessments (PICRA):** Using the current American Institute of Architects (AIA) Guidelines as a guide, staff must conduct and document PICRA for all construction projects (in-house and by contract) during the design or planning stage of the work (prior to bidding, purchasing, or starting work). PICRAs must be documented in writing and focus on eliminating or minimizing the risk of infection during construction and renovation activities. The complexity of the PICRA report is determined by the complexity of the threats posed by the construction project. Assigned VA staff, including resident engineers or project managers for major construction, must confirm compliance during the construction phase of the work. Guidelines for the PICRA can be found in VA TVHS **Memorandum 626-11-138-74, Construction and Renovation Infection Prevention & Control Precautions.**

(3) Ensure Interim Life Safety Measures (ILSM) are in place where necessary as outlined in Engineering Standard Operating Procedures (SOP) 138P-2. Facility safety, engineering staff, and VA resident engineers must ensure that ILSM are implemented on all construction work in accordance with The Joint Commission (TJC), Environment of Care standards. ILSM are required when construction activities pose significant hazards or compromise fire and Life Safety measures. Engineering Standard Operating Procedures on the Project Management Program address ILSM in accordance with TJC requirements. Implementing ILSM is the responsibility of VA TVHS and construction contractors in accordance with VA Master Specification 01010, General Requirements.

(4) Participate in all phases of construction work from planning through completion. This includes review and approval of the construction plans, contract specifications, and contract submittals related to construction safety and health and any other documents that may assist in the implementation of an effective construction safety program. The multidisciplinary team must be involved early in the process and continue oversight on a regular basis to avoid costly

and disruptive delays. The frequency of multidisciplinary team reviews will be determined by the team.

(5) Ensure the construction safety program includes periodic construction site hazard surveillance activities with appropriate membership, scope, and frequency for each project as determined by the VA CP and the PICRA report. Hazard surveillance activities must be

documented as to date, time, membership of the inspection team, deficiencies, type of corrective action, and time and date of correction.

***NOTE:** Correction of hazards must be tracked to completion.*

(6) Implement procedures to ensure general contractors exercise their responsibilities for ensuring subcontractors comply with VHA safety and health policies, procedures, and contract requirements.

(7) Ensure all contractors entering VHA property comply with the security management program. As a minimum, contractors must notify and obtain permission of the VHA Police, be identified by project and employer, wear police issued identification while onsite, and be restricted from unauthorized access.

(8) Require the contractor CP to implement and maintain an effective safety program that identifies and controls hazards that may cause injury or illness to VA patients, staff, visitors, and contractor employees.

**b. The Competent Person (Supervisory Project Engineer) will:**

(1) Participate in OSHA's 30 hour construction safety training and refresher courses.

(2) Ensure that the specific safety requirements of construction operations are implemented during facility projects.

(3) Participate in the VHA facility multidisciplinary team established for construction safety.

(4) Conduct periodic inspections of construction sites to ensure compliance with safety elements of the construction contract and performance of the established program(s).

**c. The Resident Engineer will:**

(1) Work with contractor and VHA staff to coordinate and monitor an effective construction safety program for projects under his/her direction.

(2) Participate in OSHA's 30 hour construction safety training and refresher courses.

(3) Participate in periodic inspections of construction sites to ensure compliance with safety elements of the construction contract and performance of the program.

(4) Support the VA CP, Safety Officer, Contracting Officer and Engineering staff in implementing the construction safety program.

**d. The Contracting Officer (CO) or Contracting Officer Representative (COR) will:**

(1) Participate in OSHA's 30 hour construction safety training and refresher courses.

(2) Ensure safety elements of this policy are included in each construction contract.

(3) Evaluate and consider past safety records of prospective contractors in the awarding of contracts.

(4) Support the VA CP, Safety Officer, Contracting Officer and Engineering staff in implementing the construction safety program.

(5) Maintain training records and document review findings throughout the duration of project.

e. **The Facility Safety Officer will:**

(1) Participate in OSHA's 30 hour construction safety training and refresher courses.

(2) Ensure that VHA policy for the construction safety program is implemented within VHA facilities.

(3) Evaluate the effectiveness of the construction safety program in an annual report to the Environment of Care Board (EOCB). All Interim Life Safety Measures (ILSM) and construction safety issues will also be reported monthly to the EOCB.

**5. REFERENCES:**

a. VHA Emerging Pathogens Guidebook, 1998, Center for Engineering and Occupational Safety and Health available electronically at: <http://vaww.ceosh.med.va.gov/>

b. National Fire Protection Agency (NFPA) Standards.

*NOTE: Current NFPA Standards are available at facility and/or Veterans Integrated Service Network (VISN) Safety and Engineering and/or Facilities Management Offices*

c. Association of Professional Infection Control (APIC) Infection Control Tool Kit Series: Construction and Renovation, available from the APIC Practitioners and Epidemiologists

d. Guidelines for Design and Construction of Hospital and Health Care Facilities, American Institute of Architects, Washington DC, 2001

e. Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health, Bureau of Environmental and Occupational Disease Epidemiology, the website is: <http://www.nyc.gov/html/doh/html/epi/moldrpt1.html>.

f. Infection Control During Construction, A Guide to Prevention and Joint Commission Compliance, Wayne Hansen, Editor, Opus Communications, 2002

g. OSHA Regulations for Construction Safety, 29 CFR 1926, available at: <http://www.osha.gov>.

h. The Joint Commission Manual

- i. VHA Directive 7701, Occupational Safety and Health
- j. Memorandum 626-11-138-74, Construction and Renovation Infection Prevention & Control Precautions
- k. Construction Safety Council, <http://www.buildsafe.org/cschome.htm>
- l. Infection Control Manual
- m. TVHS Memorandum 626-10-138-29, Fire Safety/Life Safety Management Program
- n. Construction and Renovation, APIC Text of Infection Control and Epidemiology, 3<sup>rd</sup> Edition, Volume 2, Chapter 106, 2009
- o. Guidelines for Environmental Infection Control in Healthcare Facilities, CDC HICPAC, MMWR, 52(RR10); 1-42, June 6, 2003

**6. RESCISSION:** VA TVHS Memorandum 626-10-138-31 dated April 27, 2010.

**7. RESPONSIBILITY AND REVIEW DATE:** This memorandum will be reviewed annually by the Chief, Engineering Service and reissued no later than April 30, 2016.

*/s/ Juan A. Morales, RN, MSN 6/19/2013*

Juan A. Morales, RN, MSN  
Health System Director

Attachments:

A – Pre-Construction Control Risk Assessment (PCRA)

B - Infection Prevention/ Safety Program, Periodic Construction Rounds Compliance Monitor

**DISTRIBUTION: Safety Manual**

**ATTACHMENT A**

(Note: To be filled out by Infection Control and Engineering Service during project design and revalidated at the start of construction.)

| <b>Pre-Construction Risk Assessment</b>   |    |                                |
|---|----|--------------------------------|
| <b>Infection Prevention/ Safety Construction Permit</b>   |    |                                |
| <b>Location of Construction:</b>  |    | <b>Project Start Date:</b>     |
| <b>Project Coordinator:</b>   |    | <b>Estimated Duration:</b>     |
| <b>Contractor Performing Work:</b>  |    | <b>Permit Expiration Date:</b> |
| <b>Supervisor:</b>  |    | <b>Telephone:</b>              |
| Description of project:   |    |                                |
| <b>Construction Activities</b>  |    |                                |
| The following jobs do not require completion of the Pre-construction risk assessment form on low and medium risk project areas:   |    |                                |
| <ol style="list-style-type: none"> <li>1. Paint and wallpaper in business offices and non-patient areas.</li> <li>2. Paint in empty patient room if closed for painting and less than 3 sq.ft. of wall needs patched. Filter for room unit changed after painting.</li> <li>3. Installation of soap dispenser/needle box/paper towel holder in patient room.</li> <li>4. Repair of window blind.</li> <li>5. Ceiling tile replacement for area less than 5 2 X 2 tiles in a patient area if patient is out of the immediate area and clean up can be accomplished before patient returns.</li> <li>5. Minimum repair of nurse call system/TV/Bed/Telephone.</li> <li>6. Check or replace electric outlet.</li> <li>7. Replace light bulb.</li> <li>8. Unstop sink/commode with no water on floor.</li> <li>9. Unstop commode when water on floor requires maintenance to have Housekeeping clean area immediately.</li> <li>10. Repair medical gas outlet. (Front Body)</li> <li>11. Air balance readings.</li> <li>12. Check air-conditioning.</li> <li>13. Intermediate jobs that create a moderate amount of dust inside room and is made negative by use of hepa-equipped unit with minimum 10 ACH, and all air discharged outside, hepa unit must run 2 hours after completion of job and Housekeeping must clean room before unit is removed from room. All work and use of hepa unit must be documented and copy forward to Infection Control and Safety. <b>NOTE: all duct vents to be sealed off during work!</b></li> </ol> |    |                                |
| <ul style="list-style-type: none"> <li>• <b>The above does not apply to any Protective Environment patient areas or occupied high and highest risk areas.</b></li> </ul>  |    |                                |
| Yes   | No |                                |
| <b>Will there be noise generated that will impact a department adjacent to, above, or below the construction area?</b>  |    |                                |
| a. If so, these departments must be notified.   |    |                                |
| b. How are you going to reduce the noise to an acceptable level?  |    |                                |
| Yes   | No |                                |
| <b>Will there be vibration generated that will impact a department adjacent to, above, or below the construction area?</b>  |    |                                |
| a. If so, these departments must be notified each time this type of work will be performed.   |    |                                |
| b. How are you going to reduce the vibration to an acceptable level?  |    |                                |
| Yes   | No |                                |
| <b>Are Emergency Procedures in place and posted on each job for accidental events that could greatly impact Patient Care or Life Safety to the facility? Included in these procedures are such things as:</b>   |    |                                |
| <ul style="list-style-type: none"> <li>• Emergency telephone numbers of key departments.</li> <li>• A plan that describes where main valves, switches, and controls are for the area in case of an emergency.</li> <li>• A plan for unexpected outages.</li> </ul>  |    |                                |
| <b>Environment</b>  |    |                                |
| Yes   | No |                                |
| <b>Are any of the following environmental hazards present?</b>  |    |                                |
| Will hazardous chemicals be used on this project? How will fumes and odors be controlled? <b>MSDS Sheets are required.</b>  |    |                                |
| Is asbestos abatement required on this job? <b>If so, notify Safety and FES at the activation.</b>  |    |                                |
| Will there be hot work done on this project? If there are, then a hot work permit must be posted on the job site. All hot work must have a fire watch assigned to each area while the hot work is being performed.  |    |                                |
| Will there be a Confined Space Entry required on this project? If so, the Medical Center's confined space entry program must be   |    |                                |
| <b>Utility Failures</b>   |    |                                |
| Yes   | No |                                |
| <b>Will any of the following systems be out of service at any time during the project?</b>  |    |                                |
| <ul style="list-style-type: none"> <li>• Fire alarm (<b>If out for more than 4 hours, Interim Life Safety Measures must be implemented.</b>)</li> <li>• Sprinkler (<b>If out for more than 4 hours, Interim Life Safety Measures must be implemented.</b>)</li> <li>• Electrical</li> <li>• Domestic water</li> <li>• Oxygen</li> <li>• Sewage</li> <li>• H V A C</li> </ul>  |    |                                |

|   |    |  |
|---|----|--|
| Yes   | No |  |
|   |    | <p><b>Will there be any work that will require activation of the Interim Life Safety Measures during this project? Some things that trigger ILSM's to be implemented are but not limited to:</b></p> <ul style="list-style-type: none"> <li>• Any construction that impacts an EXIT or stairs,</li> <li>• Any construction that impacts major breaches in a fire or smoke wall, (<b>penetration permit required</b>)</li> <li>• Taking the main fire protection system out of service (sprinkler),</li> <li>• Taking the main fire alarm system out of service,</li> <li>• Taking the "area" fire or fire alarm systems out of service for more than 4 hours within a 24-hour period.</li> </ul>   |
|   |    | <p><b>Implementation of the ILSM requires a fire watch and the ILSM forms to be completed (forms are to be obtained from the Medical Center Fire Department)</b></p>   |
| <b>Additional Safety Concerns</b>   |    |  |
| Yes   | No |  |
|   |    | Will construction affect exit routes from occupied areas adjacent to construction site?  |
|   |    | Will project affect traffic patterns in area? <b><i>If yes, explain plan.</i></b>  |
|   |    | <p><b>The following must be completed prior to any construction activities.</b></p> <ul style="list-style-type: none"> <li>• Separation wall must be constructed prior to project beginning.</li> <li>• Fire protection systems must remain intact.</li> <li>• Provide extra fire extinguishers in work areas.</li> <li>• Maintain exit lights in work area.</li> <li>• Maintain negative air in construction area (24/7) through duration of project.</li> <li>• There cannot be any return air from within the construction area to the rest of the building.</li> <li>• Redirect exiting not to go through construction area.</li> <li>• Put signs on doors into construction area "Construction Area – Do Not Enter".</li> <li>• Maintain daily logs and keep a current Hot Work Permit.</li> <li>• Place tacky mats at doors exiting construction area.</li> <li>• All debris removal must be by covered cart.</li> <li>• Maintain clean and orderly work area.</li> <li>• How will this project affect the departments above, below and adjacent to this project?</li> </ul> |
| <b>Air Quality and Infection Control</b>  |    |  |
| The construction activity types are defined by the amount of dust that is generated, the duration of the activity, and the amount of shared HVAC systems. Contact CVAMC's Safety Office and Infection Preventionist if any activity is questionable under these guidelines. |    |  |
| Yes   | No |  |
|   |    | Will dust be generated during this project?<br><b><i>If yes, explain location of and plan for interim dust barriers or attach floor plan with barriers clearly marked.</i></b>   |
|   |    | Will debris removal be necessary? <b><i>If yes, explain plan for debris removal and control.</i></b>   |
|   |    | Negative airflow ventilation and filtration in place and assessed for effectiveness.   |
|   |    | Exhaust fans in place and functioning.   |
|   |    | Is supply duct to area closed and HEPA filtration unit in place and functioning in adjacent patient care area?   |
|   |    | Will work be done in a sterile area? <b><i>If so, how are you going to maintain sterile atmosphere in work area and access to and from work area?</i></b>  |
| <b>Type A Inspections and Non-Invasive Activities or Small scale, Short duration Activities</b>   |    |  |
| Yes   | No |  |
|   |    | Removal of ceiling tiles for visual inspection (limited to <25% of total area)   |
|   |    | Painting (limited sanding to <10% of area)   |
|   |    | Wall covering—Describe work to be done:  |
|   |    | Electrical trim work. Describe:  |
|   |    | Minor plumbing. Describe:  |
| <b>Type B Small scale, short duration activities that create minimal dust.</b>  |    |  |
| Yes   | No |  |
|   |    | Installation of telephone and computer cabling   |
|   |    | Access to chase spaces   |

|               |    |  |
|---------------|----|--|
| <b>Type C</b> |    | <b>Any work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies.</b>            |
| Yes           | No |  |
|               |    | Sanding of walls-(>50% of surface area)-drywall finishing  |
|               |    | Removal of <input type="checkbox"/> floor coverings <input type="checkbox"/> ceiling tile <input type="checkbox"/> casework (>50% of surface area) Describe: |
|               |    | Cutting of walls or ceiling. Describe:   |
|               |    | New wall construction  |
|               |    | Minor ductwork or electrical work above ceilings   |
|               |    | Major cabling activities   |
|               |    | Activity cannot be completed within a single work shift  |

|               |    |   |
|---------------|----|---|
| <b>Type D</b> |    | <b>Major demolition and construction projects.</b>                    |
| Yes           | No |   |
|               |    | Will require heavy demolition or removal of a complete ceiling system |
|               |    | New construction  |

| <b>GROUP I<br/>LOWEST</b>                   | <b>GROUP 2<br/>MEDIUM</b>  | <b>GROUP 3<br/>HIGH</b>   | <b>GROUP 4<br/>HIGHEST</b>  |
|---|--|---|---|
| 1.) Office areas<br>2.) Hallways<br>3.) EMS | 1) Ancillary Therapy areas<br>2) Respiratory Therapy<br>3) Outpatient Clinics<br>4) CBOC's<br>5) Mental Health Units | 1) Pharmacy Areas<br>2) Radiology<br>3) Triage<br>4) Laboratories | 1) CLCs<br>2) SPD<br>3) Acute Care Units<br>4) Bone Marrow Transplant Unit<br>5) Operating Rooms<br>6) Chemotherapy areas (outpatient clinics/inpatient)<br>7) Areas/Units adjacent to BMTU<br>8) Palliative Care<br>9) ICU's |

Contact the Infection Preventionist or Safety Office for risk assessment of any area not listed above.

| <b>CONSTRUCTION ACTIVITY</b> (from previous page)<br><i>Check type of activity</i>                 | <b>INFECTION CONTROL RISK GROUP</b> (see above)<br><i>Check risk group</i> |
|--|--|
| TYPE A: Inspection, non-invasive activity  | GROUP 1: Lowest Risk   |
| TYPE B: Small scale, short duration projects   | GROUP 2: Medium Risk   |
| TYPE C: Activity generates moderate to high levels of dust, requiring >1 work shift for completion | GROUP 3: High Risk   |
| TYPE D: Major duration and construction activities<br>Requiring consecutive work shifts            | GROUP 4: Highest Risk  |

**CLASSIFICATION OF REQUIRED PREVENTIVE MEASURES**

| <b>CONSTRUCTION ACTIVITY-<br/>INFECTION CONTROL<br/>RISK GROUP</b> | <b>TYP<br/>E</b> | <b>TYP<br/>E</b> | <b>TYPE<br/>"C"</b> | <b>TYP<br/>E<br/>"iy,"</b> |
|--|------------------|------------------|---------------------|----------------------------|
| <b>Group 1</b>   | <b>I</b>         | <b>I</b>         | <b>II</b>           | <b>III/IV</b>              |
| <b>Group 2</b>   | <b>I</b>         | <b>I</b>         | <b>III</b>          | <b>IV</b>                  |
| <b>Group 3</b>   | <b>II</b>        | <b>III</b>       | <b>III/IV</b>       | <b>IV</b>                  |
| <b>Group 4</b>   | <b>III</b>       | <b>III/IV</b>    | <b>III/IV</b>       | <b>IV</b>                  |

**An Infection Control—Safety Construction Permit is required for Class III or higher projects. Refer to shaded area on Construction Activity/Risk Group Matrix (above).**

|                 |  |  |
|-----------------|--|--|
| <b>CLASS I</b>  | 1. Execute work by methods to minimize raising dust from construction operations.  | 2. Immediately replace any ceiling tile displaced for visual inspection.   |
| <b>CLASS II</b> | 1. Provide active means to prevent air-borne dust from dispersing into atmosphere<br>2. Water mist work surfaces to control dust while cutting.<br>3. Seal unused doors with duct tape.<br>4. Block off and seal air vents.<br>5. Wipe surfaces with disinfectant. | 6. Contain construction waste before and during transport in tightly covered containers.<br>7. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area.<br>8. Place dust mat at entrance and exit of work area as needed.<br>9. Remove or isolate HVAC system in areas where work is being performed. |

|           |   |   |
|-----------|---|---|
| CLASS III | <ol style="list-style-type: none"> <li>1. Obtain infection control permit before construction begins.</li> <li>2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system.</li> <li>3. Complete all critical barriers before construction begins.</li> <li>4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</li> <li>5. Contain construction waste before and during transport in tightly covered containers.</li> <li>6. Seal holes, pipes, conduits, etc. appropriately.</li> </ol>  | <ol style="list-style-type: none"> <li>7. Place dust mat at entrance and exit of work area. Replace as needed.</li> <li>8. Do not remove barriers from work area until completed project is inspected by Safety and Epidemiology Depts. and thoroughly cleaned.</li> </ol> <p><i>After work is completed:</i></p> <ol style="list-style-type: none"> <li>9. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</li> <li>10. Remove isolation of HVAC system.</li> </ol>  |
| Class IV  | <ol style="list-style-type: none"> <li>1. Obtain infection control permit before construction begins.</li> <li>2. Isolate HVAC system in area where work is being done to prevent contamination of duct system.</li> <li>3. Complete all critical barriers or implement control cube method before construction begins.</li> <li>4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</li> <li>5. Seal holes, pipes, conduits, and punctures appropriately.</li> <li>6. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.</li> </ol> | <ol style="list-style-type: none"> <li>7. All personnel entering work site are required to wear shoe covers</li> <li>8. Contain construction waste before and during transport in tightly covered containers. Cover transport receptacles or carts. Tape covering.</li> <li>9. Do not remove barriers from work area until completed project is inspected by Safety and Epidemiology Depts. and thoroughly cleaned.</li> </ol> <p><i>After work is completed:</i></p> <ol style="list-style-type: none"> <li>10. Vacuum work area with HEPA filtered vacuums.</li> <li>11. Wet mop with disinfectant.</li> <li>12. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</li> <li>13. Remove isolation of HVAC system.</li> </ol> |

**Additional concerns for all classes:**

1. **Maintain manpower and equipment including dust mops, wet mops, brooms, buckets, and clean wiping rags for cleaning fine dust from floors and adjacent occupied areas.**
2. **Contain work areas outside of construction barriers, including spaces above ceilings, with full height polyethylene sheet barrier, tightly taped.**
3. **Clean up dust tracked outside of construction area immediately.**
4. **Temporary construction barriers and closures above ceiling must be dust tight.**

**Additional Requirements or Concerns:**

### Attachment B

(Note: Fill out for Class II, III, and IV at interval specified by Infection Prevention on A-1)

| <b>Infection Prevention / Safety Program</b>                                      |                     |  |  |
|---|---------------------|--|--|
| <b>Periodic Construction Rounds Compliance Monitor</b>                            |                     |  |  |
| <b>Location:</b>  | <b>Observed by:</b> | <b>Review Date:</b>                                      | <b>Review Date:</b>                                      |
| <b>1. Barriers</b>  |                     | <b>Review Time:</b>                                      | <b>Review Time:</b>                                      |
| a. Construction signs posted for the area   |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. Doors properly closed and sealed   |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c. Floor area clean, no dust tracked  |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| <b>2. Air Handling</b>  |                     |  |  |
| a. All windows closed behind barrier  |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. Negative air at barrier entrance (Types III & IV)                              |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c. HVAC system adjusted/modified (Per Attachment. A-1)                            |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| <b>3. Project Area</b>  |                     |  |  |
| a. Debris removed in appropriate container  |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. Dust Control mats: Walk off mats clean & adequate to contain construction dust |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c. Routine cleaning of trash/waste/debris   |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| <b>4. Traffic Control</b>   |                     |  |  |
| a. Restricted to necessary staff only with proper escort and construction workers |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. All doors and exits free of debris   |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| <b>5. Dress Code</b>  |                     |  |  |
| a. Appropriate for the area   |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b. Required to enter  |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c. Required to leave  |                     | Yes <input type="checkbox"/> No <input type="checkbox"/> | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| <b>Comments</b>   |                     |  |  |

| <b>Infection Prevention / Safety Program</b>           |                     |                     |                     |
|--|---------------------|---------------------|---------------------|
| <b>Periodic Construction Rounds Compliance Monitor</b> |                     |                     |                     |
| <b>Location:</b>                                       | <b>Observed by:</b> | <b>Review Date:</b> | <b>Review Date:</b> |
| <b>1. Barriers</b>                                     |                     | <b>Review Time:</b> | <b>Review Time:</b> |
|  |                     |                     |                     |

- - - E N D - - -